

## CLAIMS

1. A coin discriminating device, comprising  
a sensor electrode (5),  
5 an oscillator (13) coupled to the sensor electrode,  
the oscillator being capable of generating an output signal  
with a frequency ( $f_{vco}$ ) which is capacitively controllable,  
a frequency detector (15-20) adapted to receive the  
output signal from the oscillator (13) as well as a  
10 reference signal from a reference oscillator (15) so as to  
provide an output which comprises a difference ( $\Delta f$ ) between  
aforesaid signals for detecting a frequency deviation ( $\Delta f$ )  
in said oscillator output signal, caused by a variation in  
capacitance ( $C_m$ ) at said sensor electrode when a coin (1)  
15 is positioned in a vicinity of the sensor electrode, and  
a processing device (23) adapted to determine a  
thickness ( $d$ ) of said coin from said frequency deviation  
( $\Delta f$ ),  
**characterized in that**  
20 the coin discriminating device is arranged such that  
said variation in capacitance ( $C_m$ ) occurs in a gap ( $x$ )  
between the sensor electrode (5) and a surface of the coin  
(1), wherein the size of the gap ( $x$ ) depends on the  
thickness ( $d$ ) of the coin.  
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2. A coin discriminating device according to claim 1,  
wherein the oscillator (13) comprises a voltage-controlled  
oscillator.

3. A method of determining a thickness of a coin (1) by detecting and evaluating a variation in capacitance ( $C_m$ ), **characterized** by the steps of detecting the variation  
5 in capacitance ( $C_m$ ) between a sensor electrode (5) and a surface of the coin (1), wherein said variation in capacitance ( $C_m$ ) occurs in a gap (x) between the sensor electrode (5) and a surface of the coin (1), and wherein the size of the gap (x) depends on the thickness (d) of the  
10 coin.

4. A method according to claim 3, comprising the steps of:  
generating a first signal having a frequency ( $f_{vco}$ )  
15 which depends on said variation in capacitance ( $C_m$ ),  
generating a second signal having a fixed reference frequency ( $f_{ref}$ ),  
producing a value ( $\Delta f$ ) representing a difference in frequency between said first and second signals, and  
20 from said difference in frequency, determining the thickness of the coin (1)

5. A coin handling machine (200) comprising a coin inlet (210), a coin feeder (220), a coin discriminator  
25 (230) and a handling device (250), wherein the coin discriminator is coupled to the handling device and is adapted to determine a type, identity or denomination of respective coins (1) received from the coin feeder, **characterized** in that the coin discriminator (230) comprises:  
30 a sensor device (12) capable of measuring a variation in capacitance ( $C_m$ ) between a sensor electrode (5) and a surface of an individual coin (1), wherein said variation in capacitance ( $C_m$ ) occurs in a gap (x) between the sensor electrode (5) and a surface of the coin (1), said size of  
35 the gap (x) depending on the thickness (d) of the coin (1),

... a signal generating device (15-20) capable of producing a signal ( $\Delta f$ ) representing said variation in capacitance, and

5 a processing device (23) capable of determining a thickness of the coin (1) from said signal.